

**FOURTH EDITION**

# **Health Program Planning and Evaluation**

**A Practical, Systematic Approach  
for Community Health**

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# Preface to the Fourth Edition

The fourth edition of *Health Program Planning and Evaluation* has stayed true to the purpose and intent of the previous editions. This advanced-level text is written to address the needs of professionals from diverse health disciplines who find themselves responsible for developing, implementing, or evaluating health programs. The aim of the text is to assist health professionals to become not only competent health program planners and evaluators but also savvy consumers of evaluation reports and prudent users of evaluation consultants. To that end, the text includes a variety of practical tools and concepts necessary to develop and evaluate health programs, presenting them in language understandable to both the practicing and novice health program planner and evaluator.

Health programs are conceptualized as encompassing a broad range of programmatic interventions that span the social-ecological range, from individual-level to population-level programs. Examples of programs cited throughout the text are specific yet broadly related to improving health and reflect the breadth of public health programs. The examples have been updated once again to reflect current best practices. Maintaining a public health focus provides an opportunity to demonstrate how health programs can target different levels of a population, different determinants of a health problem, and different strategies and interventions to address a health problem. In addition, examples of health programs and references are selected to pique the interests of the diverse students and practicing professionals who constitute multidisciplinary program teams. Thus, the content and examples presented throughout

the text are relevant to health administrators, medical social workers, nurses, nutritionists, pharmacists, public health professionals, physical and occupational therapists, and physicians.

This textbook grew from teaching experiences with both nurses and public health students and their need for direct application of the program planning and evaluation course content to their work and to their clients and communities. Today programs need to be provided through community-based healthcare settings to address broad public health issues and expand the individual to population focus. The distinction between individual patient health and population health is a prerequisite for the thinking and planning—in terms of aggregates and full populations—by students from clinical backgrounds.

In most graduate health professions programs, students take a research methods course and a statistics course. Therefore, this evaluation text avoids duplicating content related to research methods and statistics while addressing and extending that content into health program development, implementation, and evaluation. In addition, because total quality management and related methodologies are widely used in healthcare organizations, areas of overlap between quality improvement methodologies and traditional program evaluation approaches are discussed. This includes ways that quality improvement methodologies complement program evaluations. Sometimes evaluations are appropriate; sometimes they are not. Enthusiasm for providing health programs and performing evaluation is tempered with thoughtful notes of caution in the hope that students will avoid potentially serious and costly program and evaluation mistakes.

## ► Unique Features

The *Fourth Edition* has retained the three unique features that distinguish this text from other program planning and evaluation textbooks: use of the public health pyramid, consistent use of a model of the program theory throughout the text, and role modeling of evidence-based practice.

The public health pyramid explains how health programs can be developed for individuals, aggregates, populations, and service delivery systems. Use of the pyramid is also intended as a practical application of the social-ecological perspective that acknowledges a multilevel approach to addressing health problems. The public health pyramid contains four levels: direct services to individuals; enabling services to aggregates; services provided to entire populations; and, at the base, infrastructure. In this textbook, the pyramid is used as an organizing structure to summarize the content of each chapter in the “Across the Pyramid” sections. In these sections, specific attention is paid to how key concepts in a given chapter might vary across each pyramid level. Summarizing the chapter content in this manner reinforces the perspective that enhancing health and well-being requires integrated efforts across the levels of the public health pyramid. Health program development and evaluation is relevant for programs intended for individuals, aggregates, populations, and service delivery systems, and this fact reinforces the need to tailor program plans and evaluation designs to the level at which the program is conceptualized. Using the pyramid also helps health professionals begin to value their own and others’ contributions within and across the levels and to transcend disciplinary boundaries.

The second unique feature of this text is that one conceptual model of program planning and evaluation is used throughout the text: the program theory. The program theory is like a curricular strand, connecting content across the chapters, and activities throughout the planning and evaluation cycle. The program theory, as a conceptual model, is composed of elements.

Articulating each of the component elements of the program theory sharpens the student’s awareness of what must be addressed to create an effective health program. One element of the program theory is the effect theory, which focuses on how the intervention results in the program effects. The effect theory had its genesis in the concepts of action and intervention hypotheses described by Rossi and Freeman; those concepts were dropped from later editions of their text. We believe these authors were onto something with their effort to elucidate the various pathways leading from a problem to an effect of the program. Rossi and colleagues’ ideas have been updated with the language of moderating and mediating factors and an emphasis on the intervention mechanisms.

Throughout the current edition of this textbook, emphasis is given to the effect theory portion of the program theory. The effect theory describes relationships among health antecedents, causes of health problems, program interventions, and health effects. The hypotheses that comprise the effect theory need to be understood and explicated to plan a successful health program and to evaluate the “right” elements of the program. The usefulness of the effect theory throughout the planning and evaluation cycle is highlighted throughout this text; for example, the model is used as a means of linking program theory to evaluation designs and data collection. The model becomes an educational tool by serving as an example of how the program theory is manifested throughout the stages of planning and evaluation, and by reinforcing the value of carefully articulating the causes of health problems and consequences of programmatic interventions. Students and novice program planners may have an intuitive sense of the connection between their actions and outcomes, but they may not know how to articulate those connections in ways that program stakeholders can readily grasp. The effect theory and the process theory—the other main element of the program theory—provide a basis from which to identify and describe these connections.

The third unique feature of this text is the intentional role modeling of evidence-based practice. Use of published, empirical evidence as the basis for practice—whether clinical practice or program planning practice—is the professional standard. Each chapter of this book contains substantive examples drawn from the published scientific health and health-related literature. Relying on the literature for examples of programs, evaluations, and issues is consistent with the espoused preference of using scientific evidence as the basis for making programmatic decisions. Each chapter offers multiple examples from the health sciences literature that substantiate the information presented in the chapter.

## ► Organization of the Book

The book is organized into six sections, each covering a major phase in the planning and evaluation cycle. Chapter 1 introduces the fictitious city of Layetteville and the equally fictitious Bowe County. In subsequent chapters, chapter content is applied to the health problems of Layetteville and Bowe County so that students can learn how to use the material on an ongoing basis. In several chapters, the case study is used in the “Discussion Questions and Activities” section to provide students with an opportunity to practice applying the chapter content. In recognition of the availability of parts of the text in digital format, each use of the Layetteville case stands on its own in reference to the chapter’s content.

Section I explores the context in which health programs and evaluations occur. Chapter 1 begins with an overview of definitions of health, followed by a historical context. The public health pyramid is introduced and presented as an ecological framework for thinking of health programs. An overview of community is provided and discussed as both the target and the context of health programs. The role of community members in health programs and

evaluations is introduced, and emphasis is given to community as a context and to strategies for community participation throughout the program development and evaluation process. Chapter 2 focuses on the role of diversity in the planning and evaluation cycle and its effects on the delivery and evaluation of health programs. Although a discussion of diversity-related issues could have been added to each chapter, the sensitive nature of this topic and its importance in ensuring a successful health program warranted it being covered early in the text and as a separate chapter. Cultural competence is discussed, particularly with regard to the organization providing the health program and with regard to the program staff members.

Section II contains two chapters that focus on the task of defining the health problem. Chapter 3 covers planning perspectives and the history of health program planning. Effective health program developers understand that approaches to planning are based on assumptions. These assumptions are exemplified in six perspectives that provide points of reference for understanding diverse preferences for prioritizing health needs and expenditures and therefore for tailoring planning actions to fit the situation best. Chapter 3 also reviews perspectives on conducting a community needs assessment as foundational to decision making about the future health program. Essential steps involved in conducting a community health and needs assessment are outlined as well.

Chapter 4 expands on key elements of a community needs assessment, beginning with a review of the data collection methods appropriate for a community needs assessment. This discussion is followed by a brief overview of key epidemiological statistics. Using those statistics and the data, the reader is guided through the process of developing a causal statement of the health problem. This causal statement, which includes the notion of moderating and mediating factors in the pathway from causes to problem, serves as the basis for the effect theory of the program. Once the causal statement has been

developed, prioritization of the problem is needed; four systems for prioritizing in a rational manner are reviewed in Chapter 4.

Following prioritization comes planning, beginning with the decision of how to address the health problem. In many ways, the two chapters in Section III form the heart of planning a successful health program. Unfortunately, students generally undervalue the importance of theory for selecting an effective intervention and of establishing target values for objectives. Chapter 5 explains what theory is and how it provides a cornerstone for programs and evaluations. More important, the concept of intervention is discussed in detail, with attention given to characteristics that make an intervention ideal, including attention to intervention dosage. Program theory is introduced in Chapter 5 as the basis for organizing ideas related to the selection and delivery of the interventions in conjunction. The effect theory element of the program theory is introduced and the components of the effect theory are explained. Because the effect theory is so central to having an effective program intervention and the subsequent program evaluation, it is discussed in conjunction with several examples from the Layetteville and Bowe County case.

Chapter 6 goes into detail about developing goals and objectives for the program, with particular attention devoted to articulating the interventions provided by the program. A step-by-step procedure is presented for deriving numerical targets for the objectives from existing data, which makes the numerical targets more defensible and programmatically realistic. We focus on distinguishing between process objectives and outcome objectives through the introduction of two mnemonics: TAAPS (Time frame, Amount of what Activities done by which Participants/program Staff) and TREW (Timeframe, what portion of Recipients experience what Extent of Which type of change).

Section IV deals with the task of implementing a health program. Chapter 7 provides an in-depth review of key elements that constitute the process theory element of the program theory—specifically, the organizational plan and services utilization plan. The distinction between

inputs and outputs of the process theory is highlighted through examples and a comprehensive review of possible inputs and outputs. Budgeting for program operations is covered in this chapter as well. Chapter 8 is devoted entirely to fiscal data systems, including key aspects of budgeting, and informatics. Chapter 9 details how to evaluate the outputs of the organizational plan and the services utilization plan. The practical application of measures of coverage is described, along with the need to connect the results of the process evaluation to programmatic changes. Program management for assuring a high-quality program that delivers the planned intervention is the focus of Chapter 10.

Section V contains chapters that are specific to conducting the effect evaluations. These chapters present both basic and advanced research methods from the perspective of a program effect evaluation. Here, students' prior knowledge about research methods and statistics is brought together in the context of health program and services evaluation. Chapter 11 highlights the importance of refining the evaluation question and provides information on how to clarify the question with stakeholders. Earlier discussions about program theory are brought to bear on the development of the evaluation question. Key issues, such as data integrity and survey construction, are addressed with regard to the practicality of program evaluation. Chapter 12 takes a fresh approach to evaluation design by organizing the traditional experimental and quasi-experimental designs and epidemiological designs into three levels of program evaluation design based on the design complexity and purpose of the evaluation. The discussion of sampling in Chapter 13 retains the emphasis on practicality for program evaluation rather than taking a pure research approach. However, sample size and power are discussed because these factors have profound relevance to program evaluation. Chapter 14 reviews statistical analysis of data, with special attention to variables from the effect theory and their level of measurement. The data analysis is linked to interpretation, and students are warned about potential flaws in how numbers are understood. Chapter 15 provides a review of qualitative designs



and methods, especially their use in health program development and evaluation.

The final section, Section VI, includes just one chapter. Chapter 16 discusses the use of evaluation results when making decisions about existing and future health programs. Practical and conceptual issues related to the ethics issues that program evaluators face are addressed. This chapter also reviews ways to assess the quality of evaluations and the professional responsibilities of evaluators.

Each chapter in the book concludes with a “Discussion Questions and Activities” section. The questions posed are intended to be provocative and to generate critical thinking. At the graduate level, students need to be encouraged to engage in independent thinking and to foster their ability to provide rationales for decisions. The discussion questions are developed from this point of view. In the “Internet Resources” section, links are provided to websites that support the content of the chapter. These websites have been carefully chosen as stable and reliable sources.

## ► Additions to and Revisions in the Fourth Edition

The fourth edition of *Health Program Planning and Evaluation* represents continuous improvement, with corrections and updated references. Classical references and references that remain state of the art have been retained.

The *Fourth Edition* has retained the original intent—namely, to provide students with the ability to describe a working theory of how the intervention acts upon the causes of the health problem and leads to the desired health results. Some content has been condensed in order to allow enough room to describe current evaluation approaches adequately for both new and experienced practitioners. For instance, Chapter 1 now includes participatory evaluations in addition to outcome- and utilization-focused evaluations. In addition to disciplines traditionally recognized

in western medical care, Chapter 2 now includes acupuncture and massage therapy as examples of health professional diversity. Discussion of the nuances of cultural competency has been refined, in light of the continuing importance and challenges of this area. Community strengths have been given more attention in Chapter 3 in recognition of the powerful potential of shifting from a “deficit-based” to an “asset-based” perspective on health planning. Chapter 4 now devotes greater attention to the health evaluation potential of data from social media such as Facebook and Twitter, as well as geospatial data, including attendant concerns about privacy, and also notes implications of the increasingly prevalent public rankings of community health status. Examples of infrastructure-level interventions within the public health pyramid have been added in Chapter 5. Discussion of financial modeling options in Chapter 8 now includes simulation modeling, an exciting if also resource-intensive option to conducting real-world experiments, which are, of course, inevitably expensive themselves. Chapters 9 and 15 include emerging data collection techniques such as participant self-reports, video, photos, and audio recordings that may make public health evaluation more inclusive of the people such interventions seek to serve. Chapter 13 includes updates on surveying, reflecting the decreased numbers of people with land-line phones, long a mainstay of health evaluations. Options for online surveying have been updated in Chapter 14; given the rapid evolution of big data such as those available from social media, billing, and medical records, discussion of this topic has been updated in Chapter 13 as well. Finally, Chapter 16 now includes bioethics—the application of ethical and philosophical principles to medical decision making—as an increasingly salient component of responsible health evaluation.

In sum, we have worked hard to sustain this book’s conceptual and empirical rigor and currency in the *Fourth Edition* while maintaining accessibility for a range of health evaluators. Above all, we hope this book is useful to our readers’ vitally important efforts to improve health.





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# List of Acronyms

|        |  |       |   |
|--------|--|-------|---|
| ABCD   | Asset-based community development                        | DHHS  | U.S. Department of Health and Human Services                                |
| ACA    | Affordable Care Act                                      | DSM-5 | <i>Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition</i> |
| AEA    | American Evaluation Association                          | EBM   | Evidence-based medicine   |
| AHRQ   | Agency for Healthcare Research and Quality               | EBP   | Evidence-based practice   |
| ANOVA  | Analysis of variance                                     | EHR   | Electronic health record  |
| APHA   | American Public Health Association                       | EMR   | Electronic medical record   |
| BPRS   | Basic priority rating system                             | FTE   | Full-time equivalent  |
| BRFSS  | Behavioral Risk Factor Surveillance System               | GAO   | U.S. Government Accountability Office                                       |
| BSC    | Balanced Score Card                                      | GNP   | Gross Product   |
| CAHPS  | Consumer Assessment of Health Plans                      | GPRA  | Government Performance and Results Act                                      |
| CARF   | Commission on Accreditation of Rehabilitation Facilities | HEDIS | Healthcare Effectiveness Data and Information Set                           |
| CAST-5 | Capacity Assessment of Title-V                           | HIPAA | Health Insurance Portability and Accountability Act                         |
| CBA    | Cost-benefit analysis                                    | HIT   | Health information technology   |
| CBPR   | Community-based participatory research                   | HMOs  | Health maintenance organizations  |
| CDC    | Centers for Disease Control and Prevention               | HRQOL | Health-related quality of life  |
| CEA    | Cost-effectiveness analysis                              | HRSA  | Health Resources and Services Administration (part of DHHS)                 |
| CER    | Cost-effectiveness ratio                                 | i-APP | Innovation-Adolescent Preventing Pregnancy (Program)                        |
| CFIR   | Consolidated Framework for Implementation Research       | ICC   | Intraclass correlation  |
| CFR    | Code of Federal Regulations                              | IRB   | Institutional review board  |
| CHIP   | Community Health Improvement Process                     | JCAHO | Joint Commission on the Accreditation of Healthcare Organizations           |
| CI     | Confidence interval                                      | MAPP  | Mobilizing for Action through Planning and Partnership                      |
| CPT    | Current Procedural Terminology                           | MBO   | Management by objectives  |
| CQI    | Continuous quality improvement                           |       |   |
| CUA    | Cost-utility analysis                                    |       |   |
| DALY   | Disability-adjusted life-year                            |       |   |

**xxviii List of Acronyms**

|         |   |        |   |
|---------|---|--------|---|
| MCHB    | Maternal and Child Health Bureau<br>(part of HRSA)  | PSA    | Public service announcement   |
| NACCHO  | National Association of City<br>and County Health Officers  | QALY   | Quality-adjusted life-year  |
| NAMI    | National Alliance on Mental Illness   | RAR    | Rapid assessment and response   |
| NCHS    | National Center for Health Statistics   | RARE   | Rapid assessment and response<br>and evaluation   |
| NCQA    | National Commission on Quality<br>Assurance   | RE-AIM | Reach, Effectiveness, Adoption,<br>Implementation, and Maintenance<br>model   |
| NFPS    | National Family Planning Survey   | RR     | Relative risk   |
| NHANES  | National Health and Nutrition<br>Examination Survey   | SAMHSA | Substance Abuse and Mental<br>Health Services Administration  |
| NHIS    | National Health Interview Survey  | SCHIP  | State Child Health Insurance<br>Program   |
| NIH     | National Institutes of Health   | SES    | Socioeconomic status  |
| NPHPS   | National Public Health Performance<br>Standards   | SMART  | Specific, measurable, achievable,<br>realistic, and time (objective)  |
| OHRP    | Office for Human Research<br>Protections  | TAAPS  | <b>T</b> ime frame, <b>A</b> mount of what<br><b>A</b> ctivities done by which<br><b>P</b> articipants/ <b>P</b> rogram <b>S</b> taff |
| OMB     | Office of Management<br>and Budgeting   | TQM    | Total quality management  |
| OR      | Odds ratio  | TREW   | Time frame, what portion of<br>Recipients experience what<br>Extent of Which type of change   |
| PACE-EH | Protocol for Assessing Excellence<br>in Environmental Health  | UOS    | Units of service  |
| PAHO    | Pan American Health Organization  | WHO    | World Health Organization   |
| PDCA    | Plan-Do-Check-Act   | WIC    | Special Supplemental Nutrition<br>Program for Women, Infants,<br>and Children   |
| PEARL   | Property, economic, acceptability,<br>resource, legality system   | YHL    | Years of healthy life   |
| PERT    | Program Evaluation and Review<br>Technique  | YLL    | Years of life lost  |
| PPIP    | Putting Prevention into Prevention  | YPLL   | Years of potential life lost  |
| PRECEDE | Predisposing, Reinforcing,<br>and Enabling Factors in<br>Community Education<br>Development and Evaluation<br>(model) |        |   |